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ABSTRACT

Prepared to help small towns assess community population and economic trends, this publication provides a step-by-step guide for establishing an on-going local data collection system, which is based on four local indicators and will provide accurate, up-to-date estimates of population, family income, and gross sales within a town's trade area. The four local indicators are discussed: (1) electric hook-ups which are used to estimate present population; (2) school enrollment which is used to project population trends; (3) sales tax collections which are used to assess present economic activity; and (4) postal delivery service and postal receipts which are used to provide a further estimate of population and economic activity in the community. In addition to these four local indicators, this publication shows how to access and interpret three important indicators available from the United States Census: (1) population by incorporated community and census districts, including data on number of households and average family size; (2) personal income, including estimates of per capita and median family income; and (3) labor force, including total employment and unemployment, and male and female labor force participation rates. Examples from the community of Willcox, Arizona are provided throughout the publication. (NQA)

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# SMALL TOWN STRATEGY

# Socioeconomic Indicators for Small Towns

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**WREP 58**
**August 1982**

No serious business person would consider expanding an existing business or opening a new one without first undertaking a marketing study to determine economic feasibility or profit potential. Economic feasibility depends on two primary market factors: *population size* and *family income* within the geographic trade area to be served by a business. These two factors can be used to project the number of pants, hamburgers, flowers, automobiles, etc. that customers within the trade area will buy.

Unfortunately, most small towns do not have good trade-area population and income statistics. These communities need the tools to delineate their town's present trade area and assess its trade potential. *Trade area* is loosely defined as the geographic area whose residents, on an average, depend on your community for at least 50 percent of their purchases of basic goods such as groceries, gasoline, prescription drugs, and banking. The trade area of any individual business may be smaller or larger than the trade area for the town as a whole.

Without community-specific data, it is very difficult for chambers of commerce or local economic development groups to "talk business" with a commercial prospect in the hope of attracting that firm to the community. Economic development efforts in small towns tend to be based more on subjective wishful thinking (*"We need a shoe store"*) and community pride (*"This is a good place to raise a family"*) rather than on an objective assessment of a particular business's profit potential in the community. As a result, many firms shy away from

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small towns even if they offer a good profit potential. Likewise, local merchants often hesitate to expand their business because of limited knowledge of their trade area.

This publication offers community leaders specific guidelines for setting up a local data collection system. Included are examples from the community of Willcox, Arizona. The data collection system outlined here will provide accurate, up-to-date estimates of population, family income, and gross sales within your town's trade area. This local data system is based on four locally available indicators:

- *electric hook-ups* to estimate present population;
- *school enrollment* to project population trends;
- *sales tax collections* to assess present economic activity;
- *postal delivery service and postal receipts* to provide a further estimate of population and economic activity in the community.

In addition to the four local indicators, this publication shows how to access and interpret three important indicators available from the U.S. Census:

- *population* by incorporated community and census district, including data on number of households and average family size;
- *personal income*, including estimates of per capita and median family income; and
- *labor force* including total employment and unemployment, and male and female labor force participation rates.

Once collected, these socioeconomic indicators have various uses. A local development team or chamber of commerce could use these indicators to put together an effective campaign to cut down retail leakage, which occurs when local residents shop out of town. A small town's limited merchandise selection can force local residents to shop out of town for many items. When local residents go out of town to buy an item that is not available locally, they tend to buy other goods that they otherwise would have bought at home. Thus, local business suffers in general.

In addition to the indicators listed above, you may wish to conduct a customer survey similar to the one shown in Figure 1. Information on population thresholds—or population required to support a particular type of business—might also be useful to you. Your Extension community development specialist can provide appropriate population threshold data for types of service establishments which your town could profitably support, but which are presently lacking in your community. Table 1 shows sample population thresholds for service establishments in Arizona, along with the number of such establishments in Wilcox (for further information, see Dunn and others, 1981; Gerber and others, 1980).

Armed with information from the socioeconomic indicators, the results of a local customer survey, and appropriate population threshold data for your area, the local development team can approach a prospective business with specific profit potential information tailored for your community.

The socioeconomic indicators listed here will be helpful to existing businesses. The indicators, for example, can be used to justify a bank loan to expand a business. Likewise, the indicators can be used to keep abreast of market potential and thus ahead of the competition. It is when an existing firm fails to keep up with local demand that a competing firm enters the market.

Local officials will also find the information discussed here useful as they make public decisions about land-use and community planning; public facilities (schools, libraries, sewer expansion, home delivery of mail); projected tax revenues; and grant applications. For instance, one community paid for a U.S. Census recount with the hopes of raising its revenue-sharing and state sales tax revenues—only to find that they had instead lost population. With the data collection system described here, that community might have been forewarned.

In short, business people and community leaders in small towns must keep abreast of what is happening to their local economy. The local economy will remain strong only through objective study, good planning, and cooperative action.

Table 1. Threshold Populations for Selected Business Functions in Arizona, Compared to Number of Such Establishments in Willcox, Arizona, May, 1978

| Primary Function | Number of Establishments in Willcox | Threshold |
|---|---|---|
| Restaurant | 13 | 150 |
| Service station | 13 | 300 |
| Grocery store | 13 | 330 |
| Motel | 12 | 500 |
| Real estate agency | 6 | 650 |
| General contractor | 3 | 800 |
| Auto repair | 11 | 888 |
| Bank | 2 | 1023 |
| Lumber and building supply | 2 | 1101 |
| Insurance agency | 7 | 1115 |
| Pharmacy | 2 | 1279 |
| Department store | 3 | 1359 |
| Auto parts | 5 | 1393 |
| Doctor | 3 | 1533 |
| Bulk oil and gas | 4 | 1622 |
| Plumber | 1 | 1661 |
| Dentist | 3 | 1700 |
| Hardware store | 1 | 1719 |
| Mobile home dealer* | 0 | 2129 |
| Electrical contractor | 4 | 2153 |
| Florist | 1 | 2153 |
| Bakery* | 0 | 2248 |
| Feed store | 3 | 2288 |
| Sporting goods store* | 0 | 2395 |
| Hospital | 1 | 2495 |
| Accountant | 2 | 2661 |
| Tax Service | 2 | 2792 |
| Carpet store* | 0 | 3431 |
| Photography store* | 0 | 3431 |

*These businesses have since been attracted to Willcox as a result of this analysis and through local economic development efforts

Source: Gibson, Lay James and Richard W. Reeves, "Threshold Populations for Fundamental Activities in Arizona Towns." *Journal of the Arizona Academy of Science* 8 (February 1973), and by authors.

The data collection process outlined in this publication involves two major phases. The first phase consists of obtaining the needed figures for as many years back as possible—preferably a 10-year history. In this way, data comparisons can be made over a period of time. A 10-year history also allows you to validate your figures with those published in various secondary data sources, such as the U.S. Census, your state department of revenue, or the appro-

Figure 1. Willcox Customer Survey

1. During the past year, approximately what percent of your total purchases for each of the following items were made in **Willcox?** (For example, if you purchased about 75 percent of your groceries in Willcox and 25 percent elsewhere, please check 75 percent in the appropriate blank)

| Purchases | Percent | | | | |
|---|---|---|---|---|---|
| | Less than 25 | 25 | 50 | 75 | Over 75 |
| Grocery items | ____ | ____ | ____ | ____ | ____ |
| Hardware, lumber, and building supplies | ____ | ____ | ____ | ____ | ____ |
| Gasoline, tires, auto parts, service, and repair | ____ | ____ | ____ | ____ | ____ |
| Auto sales | ____ | ____ | ____ | ____ | ____ |
| Clothing and accessories | ____ | ____ | ____ | ____ | ____ |
| Fabrics and sewing supplies | ____ | ____ | ____ | ____ | ____ |
| Footwear | ____ | ____ | ____ | ____ | ____ |
| Furniture, T.V., home appliances, and furnishings | ____ | ____ | ____ | ____ | ____ |
| T.V. repair | ____ | ____ | ____ | ____ | ____ |
| Prescription drugs | ____ | ____ | ____ | ____ | ____ |
| Nonprescription drugs, health and beauty aids | ____ | ____ | ____ | ____ | ____ |
| Movies and entertainment | ____ | ____ | ____ | ____ | ____ |
| Office supplies | ____ | ____ | ____ | ____ | ____ |
| **Services** | | | | | |
| Accounting, bookkeeping, and tax service | ____ | ____ | ____ | ____ | ____ |
| Lawyer services | ____ | ____ | ____ | ____ | ____ |
| Banking | ____ | ____ | ____ | ____ | ____ |
| If engaged in farming or ranching, how much of your farm and ranch supplies, equipment, and services are purchased in Willcox? | ____ | ____ | ____ | ____ | ____ |

2. What goods or services do you most often go out of Willcox to buy? _____

3. What do you *like* about shopping in Willcox? _____

4. What do you *dislike* about shopping in Willcox? _____

5. What additional business, if any, would you like to see located in Willcox? (List in order of preference.)

   A. _____

   B. _____

   C. _____

6. How many miles is your present place of residence from the City of Willcox? (If you live *within* the Willcox city limits, indicate "0" (zero) in the blank below.)

   _____ miles

7. In what town or rural area is your place of residence?

   _____

Thank you!



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priate office. This phase also establishes a formal data collection system between the local coordinating organization, such as the local chamber of commerce, and the particular data source, such as the local utility company or the post office.

The second phase of data collection consists of continuous updating of figures at selected times throughout the year. With this second phase in operation, the community should have the means to study current growth trends and regional economic activity.

Your community may wish to seek professional help for this type of data collection. Sources for professional help might include the Extension community development program at your Land Grant university and your state office of economic planning and development.

# Local Sources of Information

## Electric Hook-Ups

Periodic inspection of registered electric meter hook-ups in a particular area is a convenient and useful way of observing and estimating community and trade-area growth trends. In most situations, you may assume that each residential and commercial electric hook-up or account represents a single residence or business. Multiple electric hook-ups are not common.

**Data Collection.** Contact the accounting or finance department of the local electric company or companies which serve your town and its trade area. We recommend an initial meeting with the general manager to explain the purpose of the project and obtain his or her support and permission to access records. The electric company should be able to provide you with past and present figures on residential and small commercial hook-ups, broken down by districts served. Efforts should be made to ensure that such figures do not contain irrigation, street light, and security light accounts or other nonresidential or noncommercial uses. A 10-year history is useful.

Most electric companies divide their total service area into several geographic districts for accounting purposes. Decide which of these service districts comprise your town's trade area. Consult with business leaders in the commodity areas of groceries, gasoline, prescription drugs, and banking to determine what they perceive their respective trade areas to be. An analysis of results from a customer survey such as the one presented in Figure 1 might help you define your town's trade area.

When delineating your town's trade area, be realistic. Include only those electric service districts whose residents do at least 50 percent of their total shopping and banking in your town. Exaggeration of your trade area might later endanger your credibility in using this data with business prospects.

For each of the selected service districts, ask the electric company's accounting department to provide you with the number of commercial and residential electric hook-ups, as of June 30th and December 31st of each year. Most reports are completed by these dates, which represent the end of the fiscal year and the calendar year, respectively. Obtaining the figures for these times will also permit study of seasonal fluctuations.

For accurate year-to-year comparisons, you may need to adjust the data. Ask a person knowledgeable in the electric company's accounting system the following questions:

- ☐ During the past 10 years, have there been any boundary changes in the service districts? Has the town annexed any property during this time?
- ☐ How many multiple hook-ups—several businesses or residences on one hook-up—are there?
- ☐ Have there been any changes in the accounting system or data coding categories used?

Where such changes have occurred, adjustments need to be made to make figures comparable over time.

Once you have collected the data for each of the relevant service districts, and the necessary adjustments have been made for accounting and boundary deviations, you may construct a summary table. Include a year-by-year account of the number of residential and commercial hook-ups in the region as of each June and December. Group hook-ups into two categories: (1) those within the city's corporate limits and (2) those outside the city's corporate limits but within its trade area. This grouping will allow comparisons between city and noncity areas. Also, any boundary changes which may have occurred in past years between individual districts will be offset by combining all trade-area service districts into one.

**Data Update.** The updating procedure will usually involve a telephone call to the same department from which the initial data were obtained. Since accounting records of the electric company may be tied up the last week of each month, current hook-up counts may be obtained the second week of July (for June hook-ups) and the second week in January (for December hook-ups). Inquire about significant accounting or boundary changes that might have taken place since the last collection period so that appropriate adjustments can be made. Beware of any drastic fluctuations in the data.

**Application.** The main purpose for collecting residential and commercial hook-up data is to follow and compare growth trends over a period of time. A summary table allows several kinds of comparisons:

- changes in the ratio of residential to commercial hook-ups;
- changes in the ratio of city to noncity residential hook-ups; and

| average number of persons per household | x | number of electric hook-ups | = | estimated trade-area population |
|---|---|---|---|---|

- percentage growth in number of hook-ups from one time period to another—in other words, June this year compared with June last year.

For example, the Willcox data showed a ratio of 1.98 for noncity residential hook-ups to city hook-ups in 1969. By 1978, this ratio increased to 2.63, indicating a much larger growth rate in the areas surrounding Willcox than in the city itself (Sulphur Springs Valley Electric Cooperative, Willcox, Arizona).

Electric hook-up data can be used to estimate population. With a 10-year data record you may compare electric hook-up data with U.S. Census data.

For example, December 1970 city records indicate that there were 788 residential hook-ups within the City of Willcox. The 1970 Census showed Willcox as having 788 households and a population of 2,568—an average of 3.26 persons per household. Since the household figure reported by the Census matches the city's hook-up figure for December 1970, we have a compatible benchmark from which to make population estimates for following years. Using the 1970 average number of persons per household estimate, you can estimate population by multiplying this figure by the number of electric hook-ups for the year of interest. Usually, the assumption is valid that there is one residential hook-up per household. The 1980 Census provides a second benchmark for rechecking the electric hook-up data.

Trade-area population can be estimated by the same method. A different persons-per-household estimate should be used when including rural areas due to varying population densities.

If you find that your community's electric hook-up figures do not match Census data, divide your town's 1970 (or 1980) Census population by the number of December 1970 (or 1980) city residential hook-ups to arrive at an appropriate estimate for persons per residential hook-up. You will need to make a similar adjustment in the persons-per-household estimate used to calculate trade-area population.

## School Enrollment

School enrollment is another indicator of population trends within your community. Enrollment figures can indicate trends in the school-age population and, in turn, the age distribution of the community. Since high school graduates can be the single greatest source of the community's expanding labor force, school enrollment figures may be used to estimate available labor force.

**Data Collection.** Identify the school districts which lie within your town's trade area. Contact each individual school, your state department of education, or the county superintendent's office. If there are a number of rural grade schools within your town's trade area, a visit or phone call to the county superintendent's office will save time. Explain your purpose and request a 10-year history of average daily membership (ADM), broken down by elementary and high school. (You do not want average daily attendance (ADA) figures.) Inquire as to whether there have been any school-district boundary or accounting system changes in the past 10 years. If so, you will need to make adjustments.

**Data Update.** Keeping your average daily membership data current involves an annual telephone call to your county superintendent's office. Since the required annual report is prepared at the end of each fiscal year (June 30th), the second or third week of July is the best time to request ADM figures. If you cannot obtain these figures at the local level, you may need to contact your state department of education.

**Application.** School enrollment figures can provide insight to the growth trends in an area, particularly in the youth segment of the area population. For example, in Willcox population estimates derived from electric hook-up data showed gradual, but steady, increase in total population. However, school enrollment data indicated a gradual decline in total ADM, particularly among the elemetary school-age groups (Arizona Department of Education). Examining trends like these may be instrumental in making planning decisions concerning the community's future.

## City Sales Tax Collections

City sales tax figures are useful indicators of activity within the commercial sector of a community. They provide the best estimate available of dollar sales within a community during a particular time period.

Arizona cities that have instituted a local sales tax have the option of joining the state collection system. If a community signs a sales tax agreement with the state, the Department of Revenue in Phoenix collects the city's sales tax along with the state sales tax, and then returns the local sales tax revenue back to communities on a monthly basis. If this is the case for your city, you may procure sales tax information from your local city hall, as well as from your state department of revenue.

If your community is part of the state's collection system, the city clerk shoud have a monthly receipt or statement of all local taxes returned to the city since the time the state began the collection agreement. A 10-year history provides an adequate data base. If the needed figures are not accessible at city hall, contact your state department of revenue. Be sure you acquire data on *city sales tax collections* rather than the *state sales tax rebate* figures. At least in Arizona, state sales tax collections are rebated to cities on the basis of population, and thus give no indication of actual retail sales within that community.

Sales tax figures are not representative of all economic and commercial activity within the community, but they may be the best indicators available to small towns at this time. Your city clerk can provide a list of the commodities covered by the city's sales tax, as well as the current tax rate. For example, in Arizona, gasoline, wholesale (resale) items, and services (labor) are exempt from city and state sales taxes. In the case community of Willcox, all items bought for the growing and producing of agricultural products are exempt from the city sales tax—but are not exempt from the state sales tax. Willcox also imposes a 4 percent sales tax on gas and water utilities (Arizona Department of Revenue).

$$\frac{\text{this year's collections} - \text{last year's collections}}{\text{last year's collections}} = \text{percentage change in sales tax collections}$$

$$\frac{\text{sales tax collections}}{\text{city sales tax rate}} = \text{dollar-value approximation of sales}$$

You may need to adjust the sales tax figures to make them comparable over time if significant changes have occurred during the past 10 years which could influence sales tax collections. A change in sales tax collections could result from changes in (1) the sales tax rate, (2) the number of items subject to sales tax, (3) areas annexed into the city, or (4) the method of reporting sales tax collections.

At the community level, it may be impossible to separate the various components which make up the total city sales tax figure. In Arizona, isolation of sales tax collected on clothing from that collected by restaurants is not possible.

It is advisable to collect and report sales tax figures on a quarterly basis—January-March, April-June, July-September, and October-December—by adding together the appropriate monthly figures. This method of data collection will reduce the amount of work required to update the figures. Also, since the month in which the collection was reported may differ from the month in which the actual retail sale was made, quarterly figures allow more accurate comparisons over time.

**Data Update.** Maintain a current record of city sales tax collections by contacting your city hall or state department of revenue for monthly or quarterly figures.

**Application.** Comparing sales tax collections for each quarter with the same quarter from the previous year will indicate whether the general economy is up or down. The percentage change can be easily calculated: divide the dollar difference between last year's figure and this year's figure by last year's figure.

To arrive at a dollar-value approximation of sales in the community, divide sales tax collections by the city sales tax rate. Since certain commodities are exempt from sales tax, this figure is a conservative estimate of actual sales in the community.

You can determine whether the economic trends for your town are similar to those elsewhere by comparing your town's sales tax collections with those from neighboring communities. To compare sales tax collections

state per capita retail sales x trade-area population = projected retail potential

$$\frac{\text{sales tax collections}}{\text{Consumer Price Index}} \times 100 = \text{sales tax collections adjusted for inflation}$$

between two towns with different sales tax rates, divide the sales tax collection figures by each town's tax rate to arrive at comparable figures. Percentage comparisons are particularly meaningful. For example, is your community's growth rate higher or lower than the growth rates in neighboring communities?

Your town's retail potential can be estimated using the per capita retail sales figure for the state as a whole. In Arizona, the state per capita retail sales figure is obtained by adding state retail, restaurant-bar, and gasoline sales figures, and then dividing by the state population. Estimate your community's retail potential by multiplying the state per capita retail sales figure by your town's trade-area population. Compare retail potential with actual sales, as estimated from sales tax collection data, and determine whether your town is reaching its potential.

For our case community of Willcox, the 1978 retail potential was $49,478,975, compared to actual 1978 retail sales of $20,028,900. This indicates that in 1978 Willcox was achieving half its retail potential. In other words, residents of the Willcox trade area were making half their retail purchases outside the city (Arizona Department of Revenue).

Even though these calculations are only approximations, they may allow comparisons over time to help you determine whether your town is currently coming closer to its estimated retail potential.

Inflation has increased price levels for a variety of goods and services; increases in city sales tax collections reflect these inflationary prices. What would city sales tax collections be if price levels remained the same? A price index is used to deflate dollar amounts to those in a given base period. The price index is a ratio of the value of a set of goods and services in "current" dollars to the value of the same set of goods and services in "constant" (base-year) dollars. An important function of a price index is to convert values expressed in current dollars into values expressed in constant dollars.

One of the most universal price indexes used to deflate consumer dollar values is the Consumer Price Index, published monthly in the *Survey of Current Business* by the Bureau of Labor Statistics, U.S. Department of Labor. The Consumer Price Index (or CPI) reflects price changes for a variety of goods and services; we are interested in the CPI for wage and clerical workers, which reflects average monthly price changes for all goods and services. The base year presently being used in the CPI is 1967. Table 2 lists Consumer Price Indexes for quarter-ending months for the 10-year period 1971-1981, as well as average CPIs for calendar years.

Sales tax collection figures may be adjusted for inflation by dividing your town's annual (or quarterly) sales tax collection figure by the CPI for that year (or month ending the quarter), and then multiplyig the resultant figure by 100. Willcox, for example,

Table 2 Consumer Price Indexes for Selected Months, Base Year 1967

| Year | Month (end of quarter) | | | | Average for calendar year |
|---|---|---|---|---|---|
| | Mar | June | Sept | Dec | |
| 1971 | 119.8 | 121.5 | 112.2 | 123.1 | 121.3 |
| 1972 | 124.0 | 125.0 | 126.2 | 127.3 | 125.3 |
| 1973 | 129.8 | 132.4 | 135.5 | 138.5 | 133.1 |
| 1974 | 143.1 | 46.9 | 151.7 | 155.4 | 147.7 |
| 1975 | 157.8 | 160.6 | 163.6 | 166.3 | 161.2 |
| 1976 | 167.5 | 170.1 | 172.6 | 174.3 | 170.5 |
| 1977 | 178.2 | 181.8 | 184.0 | 186.1 | 181.5 |
| 1978 | 189.7 | 195.1 | 199.1 | 202.9 | 195.4 |
| 1979 | 209.3 | 216.9 | 223.7 | 230.0 | 217.4 |
| 1980 | 239.9 | 247.8 | 251.9 | 258.7 | 246.8 |
| 1981 | 265.2 | 271.4 | 279.1 | 281.1 | 272.4 |

Source: *Survey of Current Business*, Bureau of Labor Statistics, U.S. Dept. of Labor

experienced a 4.2 percent increase in sales tax collections between 1974 and 1978, after the figures were adjusted for inflation (Arizona State Department of Revenue).

## Postal Service and Receipts

Local postal revenues also provide an indication of economic activity within a town's trade area. Although a town's post office receives a considerable amount of revenue from local residents, approximately 80 percent of total postal revenues can be attributed to local business (U.S. Post Office, Tucson, Arizona district office). Postal service data can be used to estimate trade-area population as well.

Post offices are categorized according to class, depending on their volume of revenue. Class 1 and 2 post offices are required to report their postal revenues every 4 weeks. Class 3 and 4 post offices, characterized by lower revenues, report their figures only by postal quarters.

**Data Collection.** Determine which post office(s) service your town's trade area. What geographic areas are covered by each rural route? Contact the appropriate postmaster(s) to look at postal receipt records. The postmaster(s) might ask you to provide a written request indicating how the information will be used. This letter may be passed along to the area supervisor for his or her authorization.

Obtain postal receipt records for each postal quarter. The local post office should have these figures for several years. Collect figures describing all postal receipts, except those depicting trust funds, money order values, and stocks received. These three items should be subtracted from the total amount because they do not represent true postal revenue or receipts.

**Data Update.** Once postal revenue data have been collected, contact the postmaster(s) for updated quarterly receipts. Every 6 or 12 months, you might also request an update on the number of residential and business boxholders served by the post office(s).

**Application.** Postal receipts and number of boxholders are good indicators of economic activity and population trends within your town's trade area. The types of calculations and comparisons which were applied to sales tax collections also apply to postal receipts. Pay particular attention to the percentage change over last year, comparisons with neighboring communities, and statewide trends. The U.S. Postal Service publishes these figures by post office class; contact your local post office for more information.

Postal revenues, like sales taxes, are also affected by inflation. Even though postal rate changes are not included in the Consumer Price Index (Table 2), to deflate postal receipts use the same procedure used to deflate sales tax collections. Our case community of Willcox experienced a decline in postal revenue in 1976-77 over 1975-76, when expressed in deflated dollars (U.S. Post Office, Willcox, Arizona).

To estimate trade-area population using postal boxholder data, subtract the number of businesses (from electric hook-up data) from the total number of boxholders; this gives the total number of households with postal boxes. Multiply this figure by the average persons per household figure (from U.S. Census data) to arrive at a trade-area population estimate. A sample calculation determining the June 1979 Willcox trade-area population is presented in Figure 2.

While post office records provide an indication of population growth, this formula is not as accurate in estimating population as is the formula based on electric hook-ups presented earlier in this publication.

Since some families rent a box at the local post office and also receive mail at their home, some double-counting occurs. You can assume, however, that such double-counting is minimal.

Figure 2. Estimating June 1979 Willcox Trade-Area Population Using Postal Boxholder Data

| Total number boxholders | — | Number of businesses served[a] | = | Number of households | x | Average number of households[b] | = | Trade area population |
|---|---|---|---|---|---|---|---|---|
| 5,580 | — | 1,055 | = | 4,525 | x | 3.37 | = | 15,249 |

[a] Sulphur Springs Valley Electric Cooperative, Willcox, Arizona.
[b] U.S. Census.

# U.S. Census of Population as a Data Source

The single best source of socioeconomic data is the United States Census. The U.S. Census surveys all households in the nation, and provides a detailed summary of this data by community.

Bureau of the Census publications can be ordered by writing the Superintendent of Documents, U.S. Government Printing Office, Washington D.C. 20402, or Data User Services, Bureau of the Census, Denver, Colorado 80255, phone (303) 234-5824. Request publications specific for your state. We suggest you request a price list of all available Census publications before making your order. If you choose not to purchase these publications, ask for these population statistics from your Extension community development specialist.

Since the U.S. Census is only conducted every 10 years, it is important that your town initiate its own data collection system as outlined in this publication. U.S. Census data provide validation for the four local indicators—so that they can be used to estimate current population for your community and its trade area for noncensus years.

The 1980 Census gives special attention to small towns. Half of all households in communities of less than 5,000 population received the long census survey form. Only 1 in 6 households in communities over 5,000 received the long form. This 1-out-of-2 sample provides more data on small towns than has been available from past censuses. The following sections of this publication are prepared to help small towns use U.S. Census population, personal income, and labor force statistics for economic planning and development purposes.

## Population Statistics

Three census items are of particular importance with regard to population:

- total population;
- number of households; and
- average family size.

Two Bureau of the Census publications are needed to acquire this information: "PC(1)-A, Census of Population: Number of Inhabitants" and "PC(1)-B, Census of Population: General Population Characteristics." Acquire the above statistics for your county, your town, and your local census districts—which include your town and the areas immediately surrounding it. Tables included in these publications are organized according to overall population size or census district.

The publication, "Number of Inhabitants: 1970," contains a map of census districts in your state. This publication also contains tables indicating population change over the past 10 years according to county subdivisions.

The Bureau of the Census also publishes periodic population updates for counties and incorporated towns. These estimates, based on yearly totals of births and deaths, are available at the end of the fiscal year. Obtain these figures from "Population Estimates and Projections Report Series P-25, Population and Per Capita Income Estimates for the State, Counties, and Subcounty Areas."

## Personal Income Estimates

Estimates of personal income can indicate the potential purchasing power of people living within your town's trade area. Prospective business persons will consider trade-area population and personal income levels when undertaking a market feasibility study of your community.

Personal family income is another statistic available from the U.S. Census. Average family income within your town and county can be found in the Census publication, "PC(1)-C, Census of Population: General Social and Economic Characteristics."

The Bureau of the Census also publishes per capita income estimates for counties and incorporated towns—at periodic intervals following the Census. The publication, "Population Estimates and Projections Report Series P-25," contains these estimates, which represent the average income received per person in your community (or county) during the prior calendar year. These estimates are based on family income data from the last Census, income tax data from the Internal Revenue Service, and aggregate income data from the Bureau of Economic Analysis. The per capita income estimate includes wage and salary income, net farm and nonfarm self-employment income, social security and other retirement income, public assistance, and income from interest, dividends, alimony, etc.—before deductions have been made for personal income taxes and social security.

Although the Census Bureau provides per capita income estimates at periodic intervals, you may wish to compute yearly estimates. Figure 3 illustrates a method for deriving such income estimates based on your town's current trade-area population, the most recent Bureau of the Census per capita income figure for your town, and the Gross National Product

Deflator, which is used to adjust for inflation:

Step 1: Estimate your town's trade-area population by multiplying December residential electric hook-ups by average number of persons per household.

Step 2: Obtain the most recent Bureau of the Census per capita income figure for your town to use for a base year figure. Multiply your trade-area population figure, derived in Step 1, by this base year per capita income figure.

Step 3: Determine inflation ratios by obtaining the Gross National Product Deflator for your base year and each year up to the current year. This statistic may be found in the *Survey of Current Business*. The GNP Deflators for 1974 through 1981 are listed in Table 3.

Table 3. Gross National Product Implicit Price Deflator (1972 = 100)

| Year | Index |
|---|---|
| 1974 | 116.2 |
| 1975 | 126.4 |
| 1976 | 133.8 |
| 1977 | 141.6 |
| 1978 | 152.1 |
| 1979 | 162.3 |
| 1980 | 178.9 |
| March 1981 | 189.7 |

Source: Bureau of Labor Satistics, *Survey of Current Business*

Divide the GNP Deflator for the year under study by the base year's GNP Deflator. The resulting ratio indicates the impact of inflation on income between the 2 years under comparison. For example, divide the 1978 GNP Deflator (152.1) by the 1974 GNP Deflator (116.2) to arrive at an inflation ratio of 1.31.

Step 4: Adjust trade-area income for inflation by multiplying the base year income figure derived in Step 2 by the inflation ratio derived in Step 3. The resulting figure is an estimate of the combined personal income of all families residing within your town's trade area.

Step 5: Per capita income can be derived by dividing the trade-area income figure in Step 4 by your trade-area population.

Your Extension community development specialist can assist you in making these calculations.

Personal income figures can be used to describe your town's potential purchasing power. The amount of total personal income which is available for consumption will vary between

Figure 3. Estimating Total and Per Capita Income Using 1978 Figures from Willcox, Arizona Trade Area

*Step 1: Determine trade-area population.*

| | | | | |
|---|---|---|---|---|
| December electric hook-ups for trade area[a] | x | Average persons per household[b] | = | Willcox trade-area population |
| 3,569 | x | 3.37 | = | 12,028 |

*Step 2: Determine trade-area income before inflation adjustment.*

| | | | | |
|---|---|---|---|---|
| Willcox trade-area population | x | 1974 per capita income[b] | = | Trade-area population before adjustment for inflation |
| 12,028 | x | $3,904 | = | $46,955,500 |

*Step 3. Determine Inflation Ratio.*

| | | | | |
|---|---|---|---|---|
| Base year GNP Deflator[c] | ÷ | Current year GNP Deflator[c] | = | Inflation ratio |
| 152.1 ÷ 116.2 | = | 1.31 | | |
| 152.1 | ÷ | 116.2 | = | 1.31 |

*Step 4. Adjust trade-area income for inflation.*

| | | | | |
|---|---|---|---|---|
| Inflation ratio | x | Trade-area income before adjustment for inflation | = | Adjusted trade-area income |
| 1.31 | x | $46,955,500 | = | $61,511,700 |

*Step 5. Estimate per capita income.*

| | | | | |
|---|---|---|---|---|
| Adjusted trade-area income | ÷ | Willcox trade-area population | = | Estimated per capita income |
| $61,511,700 | ÷ | 12,028 | = | $5,114 |

[a]Sulphur Springs Valley Electric Cooperative, Willcox, Arizona.
[b]U.S. Census.
[c]See Table 3.

families. A portion of this total income estimate will go into savings, taxes, social security, and retirement programs. Research indicates that the average family spends 65 to 80 percent of their total personal income on personal consumption, approximately 25 percent of which goes for housing (U.S. Department of Labor, 1978; Towler, 1978).

Another important indicator derived from personal income estimates is the number of families within your town with incomes below the poverty level. If your town has a higher percentage of low income families than the state average, you will have a better chance of qualifying for state and federal economic development assistance. This statistic is obtained from the Census Bureau publication, "PC(1)-C, Census of Population: General Social and Economic Characteristics."

## Labor Force Statistics

Labor availability is important for any economic development in your town. The U.S. Census provides two important indicators of the availability of labor within your community. These indicators are (1) the unemployment rate and (2) the female labor force participation rate. These two statistics can also be obtained from Census Bureau publication, "PC(1)-C, Census of Population: General Social and Economic Characteristics."

Compare these statstics for your town, your county, and your state. Is your town's unemployment rate and female labor force participation rate higher or lower than the county and state averages? For example, in 1970 Willcox had a lower unemployment rate (4.0 percent) and a higher female participation rate (45.2 percent) compared to Arizona averages of 4.2 percent and 39.0 percent, respectively (U.S. Bureau of the Census). This indicates that the labor market is tighter in Willcox than it is in most other towns in Arizona, and partially explains why Willcox has a higher per capita income than the state average for nonmetropolitan communities.

If your town has a particularly high unemployment rate compared to the state average, you will have a better chance of qualifying for state and federal economic development assistance. Your Extension community development specialist can help you obtain updated unemployment figures for your state.

# Conclusion

This publication has been prepared to help small towns assess community population and economic trends, and provides a step-by-step guide for establishing an on-going local data collection system.

Listed in this publication are four sources of local information, as well as three indicators available from the U.S. Census. Armed with this information, plus the results of a local customer survey and population threshold information for the types of service establishments in question, your town will be prepared to talk business with economic development prospects.

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**State sources of help include:**

- The Extension community development program at your Land Grant university
- The state department of education
- The state department of revenue
- The state department of economic planning and development

**Local sources of help include:**

- U.S. Postal Service
- Utility companies
- School district or county superintendent offices
- City clerk


Prepared by Douglas Dunn, Extension Rural Development Program; and Douglas C. Cox, formerly of the Department of Geography and Regional Development, both of the University of Arizona. This publication is part of th Small Town Strategy series produced by the Western Rural Development Center. Other titles in the series include:

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